

1 WHAT IS CLAIMED IS:

- 2 1. An arrangement of a tool insertable into the mouth of a horse for the
3 care and maintenance of teeth while providing protection of soft
4 tissue within the mouth of the horse and comprising in combination:
5 an electric rotary motor having a means to hold said tool along the axis
6 of rotation of said motor, said tool having a tooth cutting surface of
7 a preselected size and shape;
8 a shaft having one end mounted to said cutting surface and the other
9 end attachable to said motor holding means thereby supplying
10 rotational motion to said tool;
11 a shaft support means through which said shaft may be removably
12 inserted;
13 a hand piece having a channel through which said shaft support means
14 is removably insertable; and,
15 a cutting surface guard fabricated as a portion of said hand piece and
16 shaped to be in encircling relation about a selected portion of said
17 cutting surface thereby exposing only a portion of said cutting
18 surface under the condition of said shaft support means, having
19 said shaft inserted therein, is mounted within said shaft support
20 channel of said hand piece and said shaft engaged within said
21 holding means thereby allowing a user of the arrangement to guide
22 said hand piece containing the partially guarded tool into the
23 mouth of the horse to separate said soft tissue from a preselected
24 portion of a tooth with said cutting surface guard and position the
25 unguarded portion of said cutting surface against a tooth to remove
26 a selection portion of said tooth by means of said tool in rotary
27 motion.
- 28
- 29 2. The arrangement defined in claim 1 wherein said shaft support
30 means further comprises a bearing mounted at a preselected position
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1 within said shaft support means and a bearing seal mounted at a
2 position between said bearing and said cutting surface through which
3 said shaft may be inserted and supported for rotary motion without
4 binding.

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6 3. The arrangement defined in claim 2 further comprising a brass sleeve
7 mountable around said shaft under the condition of said shaft being
8 inserted through said bearing and bearing seal into said shaft
9 support means, said brass sleeve providing separation between said
10 shaft and said shaft support means.

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12 4. The arrangement defined in claim 1 further comprising a flexible
13 shaft having one end adaptively mountable to said motor thereby
14 supplying rotational motion to said flexible shaft and the other end
15 having a means to hold said tool along the axis of rotation of the
16 flexible shaft thereby separating said motor from said tool so that said
17 motor may be supported at a position remote from said tool.

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19 5. The arrangement defined in claim 1 further comprising preselected
20 sized and shaped extended guards mountable to said cutting surface
21 guard to provide additional separation between said cutting surface
22 and said soft tissue within the mouth of the horse.

23

24 6. The arrangement defined in claim 1 wherein said hand piece further
25 comprises an orifice formed near said cutting surface and a second
26 channel one end in communication with said orifice, the other end
27 adapted to be removably attachable to a vacuum source whereby the
28 dust and debris created by the removal of a selected portion of a tooth
29 may first enter said orifice and then said second channel to be sucked
30 out of the mouth of the horse and deposited into said vacuum source.

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2 7. The arrangement in claim 2 wherein said shaft support means further
3 comprises gearing means mounted within said shaft support means
4 and in communication with said shaft to change the rotational
5 motion of said shaft attached to said motor holding means into
6 reciprocating motion which may be applied to said cutting surface
7 mounted on said shaft remote from said gearing means.
- 8
9 8. The arrangement in claim 2 wherein said shaft support means further
10 comprises gearing means mounted within said shaft support means
11 and in communication with said shaft to change the profile of the
12 shaft by a preselected angle thereby increasing the range of
13 placement of said cutting surface of said tool.
- 14
15 9. The arrangement in claim 4 wherein said adaptive mounting of said
16 flexible shaft is to a motor owned by the user.
- 17
18 10. The arrangement in claim 4 wherein said means to hold said tool is
19 a handle owned by the user, said flexible shaft having means to
20 adaptively mount said handle on the end of said flexible shaft under
21 the condition of said shaft mounted within said handle.
- 22
23 11. The arrangement in claim 4 further comprising a clutch mounted
24 with one end in communication with said motor and another end
25 remote from said motor in communicated with said flexible shaft
26 thereby providing interruptible transmission of motion from said
27 motor to said cutting surface in communication with said flexible
28 shaft.
- 29

- 1 12. The arrangement in claim 11 wherein said clutch further comprises
2 means to adjust the threshold of torque at which said motion is
3 interrupted.
- 4
- 5 13. The arrangement in claim 12 further comprising a clutch housing
6 mountable to said motor thereby enclosing said clutch and having a
7 mounting to retain one end of said flexible shaft in communication
8 with said clutch, said clutch housing having an means for access by
9 the user to the means to adjust the torque.
- 10
- 11 14. The arrangement in claim 1 wherein said hand piece and guard are
12 fabricated from aluminum.
- 13
- 14 15. The arrangement in claim 14 wherein the exposed surfaces of said
15 aluminum are anodized.
- 16
- 17 16. An electric motor powered arrangement insertable into the mouth of
18 a horse for the care and maintenance of equine teeth while providing
19 protection of soft tissue within the mouth of the horse and
20 comprising in combination:
21 a tool having a tooth material removal surface;
22 a shaft having a first end mounted to said tool and a second end
23 attachable to said electric motor whereby said tooth material
24 removal surface has a powered motion;
25 a hand piece fabricated with an internal shaft channel;
26 a bearing support sleeve;
27 at least one bearing mounted within said support sleeve at a
28 preselected position whereby said bearing accepts the insertion of
29 said shaft through said bearing thereby exposing the end of said
30 shaft remote from said tooth removal surface, said bearing support

- 1 sleeve mounted with said internal shaft channel whereby said
2 exposed end of said shaft is attachable to said electric motor, said
3 bearing providing support for said shaft under the condition of said
4 tooth material removal surface tool being guided into contact with a
5 preselected tooth and pressed against the tooth until a preselected
6 portion of the tooth is removed while said tooth material removal
7 surface is under powered motion;
- 8 a protective shield fabricated as part of said hand piece at a
9 preselected position and shaped to expose a preselected portion of
10 said tooth material removal surface of said tool retained within said
11 hand piece, said exposed portion guided into contact with a
12 preselected portion of the tooth whereby the remaining non-exposed
13 surface is separated from other portions of the horses mouth
14 including said soft tissue; and,
- 15 a sleeve mountable over said shaft within said shaft hand piece
16 whereby said sleeve provides additional bearing means between said
17 shaft and said hand piece without binding.
- 18
- 19 17. The arrangement defined in claim 16 wherein said bearing support
20 sleeve means further comprises a bearing mounted at a preselected
21 position within said bearing support sleeve and a bearing seal
22 mounted at a position between said bearing and said cutting surface
23 through which said shaft may be inserted and supported for rotary
24 motion without binding.
- 25
- 26 18. The arrangement defined in claim 16 further comprising a flexible
27 shaft having one end adaptively mountable to said motor thereby
28 supplying rotational motion to said flexible shaft and the other end
29 having a means to hold said tool along the axis of rotation of the

1 flexible shaft thereby separating said motor from said tool so that
2 said motor may be supported at a position remote from said tool.

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4 19. The arrangement defined in claim 16 further comprising preselected
5 sized and shaped extended guards mountable to said cutting
6 surface guard to provide additional separation between said cutting
7 surface and said soft tissue within the mouth of the horse.

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9 20. The arrangement defined in claim 19 wherein said extended guard
10 further comprises an orifice formed near said cutting surface and a
11 vacuum channel one end of which is in communication with said
12 orifice, the other end of said vacuum channel adapted to be
13 removably attachable to a vacuum source whereby the dust and
14 debris created by the removal of a selected portion of a tooth may
15 first enter said orifice and then said channel to be sucked out of the
16 mouth of the horse and deposited into said vacuum source.

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18 21. The arrangement in claim 16 wherein said bearing support sleeve
19 further comprises gearing means mounted within said bearing
20 support sleeve and in communication with said shaft to change the
21 rotational motion of said shaft attached to said motor holding means
22 into reciprocating motion which may be applied to said cutting
23 surface mounted on said shaft remote from said gearing means.

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25 22. The arrangement in claim 16 wherein said bearing support sleeve
26 further comprises gearing means mounted within said bearing
27 support sleeve and in communication with said shaft to change the
28 profile of the shaft by a preselected angle thereby increasing the
29 range of placement of said cutting surface of said tool.

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1 23. The arrangement in claim 18 wherein said adaptive mounting of
2 said flexible shaft is to a motor owned by the user.

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4 24. The arrangement in claim 18 wherein said means to hold said tool is
5 a handle owned by the user, said flexible shaft having means to
6 adaptively mount said handle on the end of said flexible shaft under
7 the condition of said shaft mounted within said handle.

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9 25. The arrangement in claim 18 further comprising a clutch mounted
10 with one end in communication with said motor and another end
11 remote from said motor in communicated with said flexible shaft
12 thereby providing interruptible transmission of motion from said
13 motor to said cutting surface in communication with said flexible
14 shaft.

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16 26. The arrangement in claim 25 wherein said clutch further comprises
17 means to adjust the threshold of torque at which said motion is
18 interrupted.

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20 27. The arrangement in claim 26 further comprising a clutch housing
21 mountable to said motor thereby enclosing said clutch and having a
22 mounting to retain one end of said flexible shaft in communication
23 with said clutch, said clutch housing having an means for access by
24 the user to the means to adjust the torque.

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26 28. The arrangement in claim 16 wherein said hand piece and guard are
27 fabricated from aluminum.

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29 29. The arrangement in claim 28 wherein the exposed surfaces of said
30 aluminum are anodized.